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On the AGRICULTURAL STATISTICS of the UNITED KINGDOM (SECOND PAPER). By JAMES CAIRD, Esq.

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HAVING been invited by the Council to continue the subject of the agricultural statistics of the United Kingdom, on which I read a paper in March last year, I propose first to consider the result of the estimates then offered of the previous crop, the probable yield of the last crop (1868), and the great public advantage which followed the early announcement contained in the summary of the returns.

I.—Estimate and Result of Crop, 1867.

It will be remembered that I then offered an estimate of the result of the bad wheat crop of 1867, in which, after making deductions for the diminished consumption likely to be caused by high prices, I computed the foreign supply required within the harvest year at 9,600,000 qrs. The actual receipts have been 9,609,006 qrs., between August, 1867, and August, 1868, the date at which the new crop was ready.

But the harvest was a very early one, and the condition of the corn so good that it was available for immediate use. The harvest year, as generally and properly understood, and within which it is very desirable that the statistical tables should be framed, is from

1st September to 1st September. Between these dates last year the total imports of wheat and flour were 9,293,000 qrs.

On either basis it will appear that my estimate was not very wide of the mark, though it was severely handled at the time, and figures were put forth to show that considerably less than two million quarters was all we could possibly receive between that time and harvest. The price, which had begun to droop, was thus again strengthened, and maintained during April, May, and part of June, when the final fall began, and steadily continued till the beginning of September, by which time the drop from the highest point had reached 20s. a quarter. But in the meantime the pressure on the poor, as was partly shown by the statistics of outdoor relief, was unnecessarily prolonged, while it was found that the foreign supply, which had been represented to have been exhausted by the enormous imports of the first six months of the harvest year, continued with very little diminution to its close. Instead of the 1,000,000 or 2,000,000 qrs., which was the utmost we were led to expect from all sources, we actually received 4,500,000 qrs. in the second half of the harvest year.

The economy in the use of bread caused by the high price of last year has proved very close to the estimate I ventured to put forth. It will, perhaps, be remembered that I assumed every 10 per cent. of additional price on the crop would diminish the consumption by 1 per cent.; and as bread had risen 50 per cent., I reckoned the saving at 5 per cent., or a little over 1,000,000 qrs. on the total consumption. The actual saving is shown by the following figures:—

	Qrs.	Qrs.
Average annual consumption since 1862, } inclusive of seed	—	20,800,000
Seed, 2½ bushels per acre	1,100,000	
Foreign wheat imported	9,300,000	
Home crop, 9,700,000 qrs. of 59 lb. quality, } equal to 61 lb. quality	9,380,000	
	—————	19,780,000
Saving by economy in the use of bread		<u>1,020,000</u>

This bears out the opinion of eminent statisticians, that the consumption of bread is very constant: that whatever the price may be, everything must be given up before bread—for the very severe pinch of an increase of price of fully one-half diminished the use of it by only one-twentieth.

II.—*Wheat Crop, 1868.*

The bountiful harvest of 1868, and the splendid condition in which it was saved rendering it fit for immediate consumption, was

a great relief to the country after the pinching caused by two bad harvests and diminished trade. If there had been only the greater acreable produce to rely on much would have been gained; but a great deal more than that was revealed by the publication of a summary of the agricultural returns on 19th September. The beneficent season had added 2,000,000 qrs. to the produce of an average crop, while the increased acreage under wheat swelled that addition by 1,200,000 qrs. more. Nor was this all; for the fine and heavy sample will improve the yield and quality of the flour by 2 or 3 lbs. a bushel, or equal to one twenty-fifth part of the total produce.

The contrast between the yield of the two last harvests, 1867 and 1868, is shown in a very striking manner when all the figures are placed together.

Years.	Acres under Wheat.	Quality. Weight per Bushel.	Total Produce at 488 lbs. per Quarter.
1867	3,640,000	lbs. 59	Qrs. 9,380,000
'68	3,951,000	63	16,436,000
Increase in 1868.....	—	—	7,056,000

Here is a difference in a single year, exceeding four months', or one-third of the total consumption. The home crop will give us within 5,100,000 qrs. of our average consumption, and if we add to that one month in consequence of the unusually early harvest, and reckon on 13 months' consumption before the next harvest may be available, we shall need 6,800,000 qrs. of foreign wheat and flour. In the six months since 1st September last we have imported about two-thirds of that quantity, so that, even if imports should for the current six months materially decrease, we are likely to receive quite enough to carry us on with moderate prices till next harvest.

III.—*Price and Supply.*

The price is a question of great delicacy, though of first importance. In the course of the year 1868 the highest average Gazette price was in May, 73s. 8d., and the lowest in December, 50s. 1d.; the difference 23s. 7d. There is thus a fall of one-third from the highest point, which corresponds in most remarkable exactness with the increased produce of 1868 over 1867. So far as our own crop is concerned, the consumer would thus appear to have got the full benefit of the good wheat harvest.

Till next harvest the price will very much depend on the rate of foreign imports. These come to us not so much in relation to price

in this country as to the productiveness of the harvest abroad. A scarcity here and high prices will draw the surplus corn from every quarter of the globe to us, but it will not cease to flow when the source of supply is abundant, however low the price may fall in this country. It is an axiom in political economy that no article can remain long below the cost of production. But that cost is very different in different countries. In this country the cost of producing wheat may be taken at the maximum. In other countries where rent, rates, or wages are greatly lower than ours, and especially where, as in Southern Russia and the valley of the Mississippi, there are likewise boundless tracts of most fertile soil, they can continue to produce wheat at prices which would entail loss on the grower in England. Moreover the vast machinery of production, once set in motion, will maintain its momentum for a considerable period after the stimulus has been withdrawn. Thus in 1860, in consequence of two deficient harvests, the price rose 10s. a quarter, and the imports increased one-third over those of 1859. They continued to swell in volume until 1863, the year of abundance, when the price fell 10s. a quarter. The imports did not then decline in the same proportion; indeed but for the disturbance of the American trade, caused by the war, there would have been no decline, and if we exclude America for that reason, and limit ourselves to Russia and Germany, which between them have furnished us with 40 per cent. of our imports since the Crimean War, I find that during 1863, 1864, and 1865, when the average price varied between 40s. and 44s., the imports continued at much the same rate as in the two preceding years, when the price was 55s.

A very productive harvest in France will exercise an immediate influence on prices in this country. Not only does her demand for foreign corn cease, but from the small average yield and the vast acreage under wheat a slight increase in the produce tells quickly up. Last year I computed an increase of one bushel on the acre in France at upwards of 2,000,000 qrs. If her increase has been in anything like the same ratio as ours, France will have a large surplus for export, probably quite enough to meet any decline caused by the deficient crop in Southern Russia.

IV.—*Steady Decline in the Price of Wheat under Free Trade.*

The effect of free trade in corn has been to lower the price of wheat in this country, notwithstanding the increase of the population and consequent increased consumption. The average price of the twenty years preceding 1848 was 57s. 4d., and of the twenty years of free trade, 52s. 3d. But if the disturbing influences of the cessation of supplies from Russia during the Crimean War, and from America during the later years and since the close of the

American War, be eliminated, the average price of the last twenty years would have stood 10s. lower than that of the twenty years preceding free trade.

This is a fact of great importance when we come to consider the increasing population of the country, and the means we have of meeting their annually growing demands upon our resources. The popular estimate of the wheat annually consumed by each person of the community in England used to be 8 bushels. In 1850 I ventured to question that opinion. My estimates then showed that it did not probably from our own soil exceed 5 bushels. Mr. Lawes has lately entered on an investigation of this subject, the first part of which he has embodied in a very able paper in the last number of the "Royal Agricultural Society's Journal." He divides the last sixteen years into two periods of eight years each, and the results of his estimates are embraced in the following summary :—

Estimated Consumption of Wheat per Head per Annum.

During the Last Sixteen Years.	England and Wales.	Scotland.	Great Britain.	Ireland.	United Kingdom.
First eight years	Bushel. 5·9	Bushel. 4·2	Bushel. 5·7	Bushel. 2·7	Bushel. 5·1
Second „	6·3	4·2	6·0	3·3	5·5
Average of whole period....	6·1	4·2	5·9	3·0	5·3

Converting these figures into pounds, it appears that during the first eight years each person consumed at the rate of 311 lbs. of wheat, and during the last period, 335 lbs. But the proportions in which that was afforded by foreign supply had also altered from 79 lbs. per head in the first, to 134 lbs. in the second. Here two very important results are shown ; first, that the people are able to buy, and do consume more bread ; and second, that we must depend wholly on foreign countries for the increased supply necessary to meet the growing consumption.

An immense impetus seems to have been given to consumption by the general increase of wages consequent on the Crimean war and the Indian mutiny, and the great exertions put forth by this country on these occasions. The foreign imports of wheat, which up to 1860 had not exceeded an annual average of 4,500,000 qrs., then rose to 10,000,000, and during the last eight years have maintained an annual average of 8,000,000 qrs.

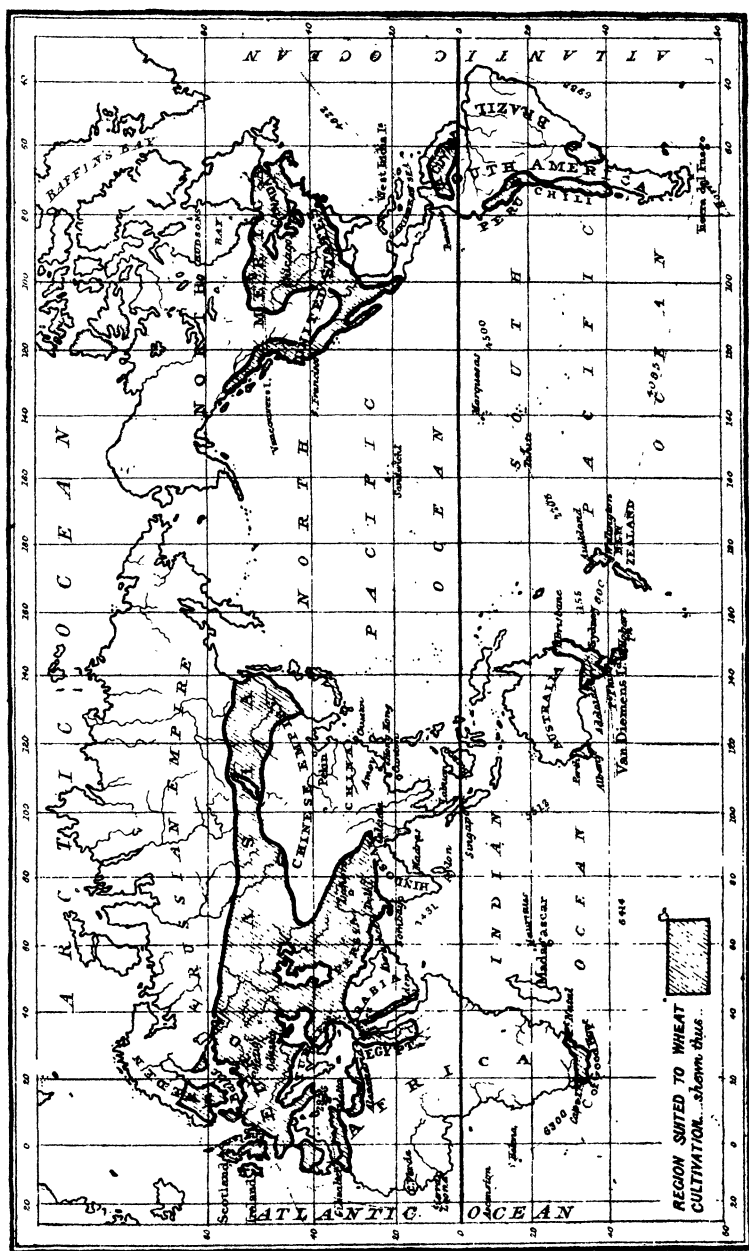
V—*Increasing Rate of Consumption likely to be Fully Supplied.*

But we have not only to provide for an increased consumption by each individual, but for an annual increase of 240,000 in the

population. This, at $5\frac{1}{2}$ bushels per head, is 165,000 qrs. In ten years, at the same rate of progress, that will have swollen to nearly 2,000,000 qrs., and in ten years more to 4,000,000. This would indicate the need of a gradual rise in our foreign imports in ten years, from the present average of 8,000,000 qrs. a-year to 10,000,000, and in twenty years to 12,000,000 qrs. a-year. In one generation more, say thirty years hence, the imports will at this rate be more than the home growth, if that should remain at its present point. Our past experience of the readiness with which the volume of foreign wheat has increased with the demand would lead to the conclusion that we need entertain no apprehension on that score. California promises us next year more than 2,000,000 qrs. France alone, by a slight improvement in her husbandry, only so much as would raise her average yield from 15 to 18 bushels an acre, could meet our requirements. And when we consider the extent of rich countries within the wheat region farther east which are scarcely begun to be tapped by the railway system, we must feel that we are yet far from having reached the limit at which a moderate rate of price will bring us sufficient supplies. FOR WHEAT, WHICH FORMS THE GREAT STAPLE OF THE FOOD OF CIVILISED MAN OUTSIDE THE TROPICS, OCCUPIES OF ALL CEREALS THE WIDEST REGION SUITED TO ITS CULTIVATION.

The importance of this fact cannot be overrated. If the wheat region had been of small extent the increase of population would have been quickly limited to the food resources of each country. A continued development of mining and manufacturing enterprise in Great Britain would have been impossible. For nothing can be done without bread. Wheat is the common food, the real staff of life. The hardworking poor are far more dependent on and much larger individual consumers of it than the rich. If its price like that of most other commodities had risen, or was likely to rise, with the increasing demand, no political foresight, no more equable arrangement of the burden of taxation, no reduction even in public expenditure could have long availed us. But the wheat region has been designed apparently to be co-extensive with the progress of civilised man, and the more regular and extensive the demands upon it the more ready and continuous becomes the supply.

The natural tendency of the gradually falling price of wheat in this country since 1848, has been to diminish the breadth of our own wheat. And the force of that tendency, in spite of the great increase of gold, shows the steadiness of its operation. There has been a yearly increase of consumers, with an increased power and capacity to obtain bread, an increasing ratio in the supply of gold, the representative of its money value; and yet in spite of all that, the price has declined, and the average breadth of wheat grown in



the United Kingdom has diminished. But the figures in the statistical returns show how quickly the price of wheat affects the home supply. The two fine crops of 1863 and 1864 reduced the average price to little more than 40s. But in 1867 the price had risen to 64s., and in one year there was an addition of 300,000 acres to our breadth of wheat.

I have already in a previous paper shown that the rate of increased productiveness of the land under wheat is very slow. From that source, therefore, there is little hope of any material increase in our home produce, in the face of larger foreign supplies at low prices. When the price of wheat falls below 50s., the farmer begins to turn his attention to other crops. The value of barley has been rising in nearly the same proportion as that of wheat has declined in recent years, and oats have also fully maintained their price. While the farmer in these, and in the increasing value of his live stock and its produce, will be able to compensate himself against the steady decline in the value of wheat, the people, that vast and increasing body of consumers, have the prospect of abundant supplies of bread at a moderate price, from the yearly extension of the means of foreign transport.

VI.—*General Results.*

Having thus endeavoured to discuss the main question answered by the agricultural returns, viz., in how far the home crop is available for the national supply of bread, I proceed to extract from the returns certain other points affecting our food and clothing. Beyond a slight increase in the breadth of potatoes, and a nearly similar decrease in barley, and the large increase of wheat already referred to, there has been no material change in the general crops of the country during the last two years. The table showing the percentage proportions of corn and green crop in each division of the United Kingdom is very interesting. In round numbers it appears that England supplies nine-tenths of all the home-grown wheat, Scotland and Ireland together only one-tenth. And the increased breadth, sown under the stimulus of the high prices of the past year in England, is equal to the whole acreage under wheat in Ireland. England produces more than three-fourths of all the barley grown in the British Islands, nearly all the beans and peas, and one-third of the oats. Ireland grows one-half more oats than Scotland, and two-thirds of the entire potato crop of the United Kingdom. The three kingdoms, as compared with France and Prussia, grew the following proportions of acres of corn to their respective populations :—

England	1 acre for every	$2\frac{3}{4}$ persons
Scotland	1 " "	$2\frac{1}{3}$ "
Ireland	1 " "	$2\frac{1}{2}$ "
France	1 " "	1 person
Prussia	1 " "	1 "

And of potatoes—

England	1 acre for every	62 persons
Scotland	1 " "	20 "
France	1 " "	12 "
Ireland	1 " "	5 "
Prussia	1 " "	5 "

With regard to live stock, these countries stand in the following proportions :—

	Cattle.			Sheep.			
England	1 for every 5 persons;		1 for every 1 of population				
Scotland	1 " 3 "		2 " 1 "				
Ireland	1 " $1\frac{1}{2}$ "		1 " 1 "				
France	1 " $2\frac{3}{4}$ "		1 " 1 "				
Prussia	1 " 3 "		1 " 1 "				

Of all these countries Ireland has thus the largest proportion of cattle, and Scotland the largest of sheep.

VII.—*Increase of Cattle and Sheep.*

The entire loss sustained by the cattle plague up to October, 1867, when it had quite ceased, was 190,000 head. The natural increase in the two years since the disease began to decline exceeds 500,000, so that the effects of that calamity, so far as the national supply of food is concerned, have been fully recovered. The increase of sheep has been very rapid, the joint effect of high price of mutton, and the panic which in some counties followed the cattle plague, and led to a substitution of sheep. The total increase of the year has been 1,790,000. The sheep stock of the United Kingdom is upwards of 35,000,000, which is almost the same in number as that of the Australian Colonies and Tasmania, according to the latest returns. The total number of sheep in the United Kingdom and the whole of the British Colonies, independent of India, cannot now be much under 100,000,000. The import of continental wool is on the decline, while that of colonial is largely increasing. At the late rate of progress, our vast woollen industry in this country will ere long be sufficiently supplied by the home and colonial produce.

Whilst the increase of sheep at home has been rapid and great, there has been a very large decrease in the supply of foreign sheep. These, which in a single year, 1865, had risen from 496,000 to 914,000, began to decline in 1867, and fell back greatly in 1868.

This was caused in some measure by the restrictions imposed on the import of sheep by the Privy Council Orders, but was partly also due to the considerable fall in the price of mutton during 1868, arising from the large supply of sheep forced into the home market by the prospect of a dearth in the green crops. But the agricultural returns have revealed to us the gratifying fact, in relation to this important branch of the national food, that there is an immense elasticity in the production and supply of sheep, both at home and abroad, and that may be largely and quickly increased by a moderate rise in price.

VIII.—*Foreign Dairy Produce not Increasing.*

The foreign supply of butter and cheese has continued very steady during the last eight years. It made a sudden rise in 1861, and had nearly doubled itself in 1862, but from that year the average supply has not materially altered. As the prices of these articles are still highly remunerative to the home producer, there is every inducement to him to develop yet further that branch of agricultural industry, on which the small and middle-class farmers are chiefly engaged.

IX.—*Large, Compared with Moderate Sized, Farms.*

The returns afford some indication of the results of large corn farms as compared with the more mixed husbandry and interests of small or moderate-sized farms. I have taken ten of the largest farm counties in England, and compared them with ten of the smallest farm counties, the total area in both cases being nearly equal. The general results may be broadly summarised thus. The large farm system embraces nearly twice the proportion of corn, and half the proportion of green crops and grass. In other words, it is doubly dependent on the price of corn as compared with the middle-class farm system, which relies to a far greater extent on its dairy produce, its fat cattle, its vegetables, and its hay. The result is, that the latter pays more rent or surplus for the use of the land, and a higher rate of wages to the labourer.

There can be no doubt that circumstances of soil and position are the chief cause of the distinctive modes of husbandry which have continued to characterise different counties, notwithstanding the obvious change in the relative values of agricultural produce. The price of wheat is not higher now than it was one hundred years ago. Barley and oats have risen 50 per cent., and animal produce more than 100 per cent. in that time. And yet wheat maintains its prominence on the heavier soils where a bare fallow is still found the most perfect and economical preparation for that crop, and in the eastern, south midland, and southern counties,

where a dry climate and somewhat thin soil is less favourable to stock husbandry and grass. It is worthy of notice that in every one of the ten counties where the large farm system prevails the chalk formation predominates, and there is no coal; while in all the ten counties of the smaller farm system coal is present, and there is no chalk. The vicinity of coal has naturally influenced the increase of population, and the consequent higher rates of rent and wages.

X.—*Proportions under Bare Fallow.*

The extent of land in England under bare fallow every year is nearly 800,000 acres, which is more than one-tenth of the whole breadth of corn. The proportion in Scotland is about a twentieth, and in Ireland less than the ninetieth part. In France and Prussia an extent equal to one-third of all the cereals is annually left to lie fallow. This undoubtedly indicates the great prevalence of a poor and low state of husbandry in these countries, due in a large degree also to the dryness of the spring and summer climates. But of the three kingdoms it is very remarkable that Ireland should stand so pre-eminently above the others in her comparative freedom from the direct loss occasioned by the necessity of leaving the land to lie fallow, which cannot be wholly accounted for by the comparatively small proportion of clay soils in that country.

XI.—*Distinctive Features of Husbandry.*

There is a much greater similarity than will be generally imagined in the agriculture of England and Scotland, and a distinctive principle of difference between them and Ireland in a very important point. This will be clearly seen by the proportions of the whole area of the three countries, exclusive of heath and mountain land, thus divided:—

England has in corn and potatoes 33 per cent., in green crops and grass 66 per cent.

Scotland has in corn and potatoes 33 per cent., in green crops and grass 66 per cent.

Ireland has in corn and potatoes 20 per cent., in green crops and grass 80 per cent.

The agriculture of England and Scotland seems thus alike in its principle of one-third exhaustive and two-thirds restorative crops, while that of Ireland has only one-fifth exhaustive to four-fifths restorative. I have included potatoes in the exhaustive crops, so that Ireland, which has by far the largest proportion in potatoes, suffers some disadvantage by this mode of comparison. But the result is very startling, as it places the agricultural system of Ireland, as an ameliorating and reproductive self-supporting system,

far above that of England and Scotland. To this I will return. But as some illustration of the effect of this exhaustive system of corn husbandry as compared with its proportion of the restorative green crops and grass, the following figures gathered from the returns are deserving of notice :—

	Percentage of Corn and Potatoes.	Percentage of Green Crop, Fallow, and Grass.	Average Produce of Wheat per Acre.
			Bushels.
England	33	66	28
Prussia	45	55	17
France.....	54	46	14

This would seem clearly to show that deterioration rapidly follows the loss of a due balance between the exhaustive and restorative crops, where there are no extraneous means of supplying the loss.

XII.—*Feeble Yield of France Explained.*

The state of agriculture in France is of much importance to the consumer of bread in this country. In some recent years she has contributed one-third of our whole foreign supply of wheat, considerably more than the entire produce of Scotland and Ireland. A good crop in France, therefore, at once tells on our prices, whilst a failure brings her large population into competition with us in the general market of the world. She has a vast breadth annually under wheat, but the yield is very small. This has been attributed, and would appear partly due, to the poverty and want of skill of her small occupiers; and many arguments have been founded upon it against the small farm system and the minute subdivision of land. But it has often struck me in passing through that part of France which lies between us and Paris that the general cultivation of the land, and the appearance of the growing crops, was quite equal to our own, and the very low average rate of the yield of wheat officially stated seemed to me therefore unaccountable. The explanation has been afforded to me by the distinguished French economist, M. De Lavergne, in the following letter, dated 25th February last :—"The official returns give a mean yield of $14\frac{1}{2}$ hectolitres per hectare, the actual yield being more above than below the estimate. "Eight departments, Le Nord, l'Oise, l'Aisne, Somme, Seine-et-Oise, Seine-et-Marne, Seine, and Eure-et-Loire, have a yield equal "to the English average; but the forty-five departments which "form the southern part of the territory, do not yield more than "10 hectolitres to the hectare. This feeble yield is caused in "many of the departments by bad cultivation, and in the south by

"the dryness of the climate in spring. The statistical returns also show 5,148,000 hectares of fallow, which is in fact the third of the surface sown with cereals." There is no help for that part of the country which suffers from great dryness of spring climate, but there would seem much room for improvement in the yield of wheat over the remainder, which comprises probably more than one-half of the surface of France. As increasing importers and consumers we are nearly as much interested in that improvement as the French people themselves. The state of agriculture must be low, indeed, where it is possible to be carried on with an average produce of 10 to 12 bushels of wheat an acre. The costs and profits of cultivation must be at the very minimum to yield any surplus for rent, and the condition of the cultivator must be a hard one. He has other sources, no doubt, which may help him—his vines and oil—but in the nature of things it is impossible that he can get any profit from his wheat crop, until by such a change of system as will increase its yield. Towards this object the French Government have for some years been unremitting in their attention, by contributing largely from the public resources to improve the internal communication of the country and facilitate the interchange of products. The increase of a few bushels an acre over so large a surface as one-half of the wheat crop in France, would give her a regular surplus for exportation.

XIII.—*Irish Agriculture.*

It was my intention to have instituted a comparison between the large farm system of England, and the small farm system of Ireland, and I had prepared detailed statements of groups of counties in the two countries for the purpose; but there are too many elements of estimate or conjecture to warrant their publication as a statistical deduction. If we confine our attention to Ireland alone, some remarkable anomalies present themselves. The province with the highest valuation—Leinster at 20s. an acre—has the smallest population on the square mile of land under the plough; while Connaught, with a valuation of 6s. 8d. an acre—the lowest of the four provinces, has the largest population in proportion to its arable land. The poorest part of the country is thus also the most populous. But that does not seem to arise from an excess of small farms, for Leinster has a larger proportion of holdings under five acres than Connaught.

XIV.—*No Recent Reduction in Small Holdings.*

A great reduction took place in the number of small holdings in Ireland during the years of the potato famine, 1845 to 1850, but since 1850 there has been very little alteration. The comparison

one constantly meets with is between the years 1841 and 1861, the small farms being stated to have fallen in that time one-half in number, and the larger sized increased in an equal ratio. But that has not been progressive. It had all taken place before 1851, and there has been no marked change in this direction during the last eighteen years. In 1867 the number of holdings was 607,000, divided thus:—307,000 farmers holding farms of 15 acres and under, and 300,000 farmers of 15 acres and upwards. *But the first-class, or small farmers, hold not more than one-eighth of the cultivated land,—the second-class, or larger farmers, holding seven-eighths of the whole.*

We have already seen that the counties in England where the system of moderate-sized farms prevail have the smallest proportion of corn, and the highest of cattle and of dairy stock. They have a greater rainfall, a deeper soil, and are more productive of grass and green crops. Now, if we exclude from consideration for a moment the 307,000 small farmers, that is exactly the state of Ireland. Her climate and soil are very favourable to green crops and grass and to dairy farming, and she has the further great advantage, which I have already shown, of having the smallest proportion of such land as it is necessary to lay fallow; and her system shows the largest proportion in the three kingdoms of restorative to exhaustive crops. Her only disadvantage as an agricultural country is the occasional visitation of seasons of too much rain. That has several times imperilled the wheat crop. But the wheat crop is less than one-tenth of the cereals of Ireland, and her agriculture is but little dependent upon it. Oats are her chief reliance as a corn crop, and from flax she derives an annual return of between two and three millions sterling—an article which may be said to be now unknown to the agriculture of England and Scotland. If we sum all up, we find that, as compared with the sister kingdoms, Ireland has on the whole a more productive soil, and her produce is chiefly of that kind which in the last twenty years has risen most in value. I am very much disposed to think that the seven-eighths of Ireland, which are in the hands of the larger farmers, yield as great a produce per cultivated acre as the average of England and Scotland. I am not in a position to submit this to any accurate test of proof, but this is the impression left on my mind as the result of a careful investigation of the question.

XV.—Distress mainly Confined to One-eighth of Land in Hands of Smallest Occupiers.

But the position of the 307,000 small farmers who occupy the remaining eighth of Ireland is probably very different. It is among that body that real distress is found, though the class of larger

farmers, not much separated from them, have helped to swell the general complaint. Experience has shown that it is only in climates and upon soils the most favourable that an entire dependence for his subsistence can be placed by the cultivator of a few acres of land. Even in Belgium, where circumstances are favourable, the small cultivator has but a hard lot of poverty and toil. He thrives where, in addition to his land, himself and his family find regular employment in some other industry. It is the same with the English peasant. A man who has regular employment at wages finds an immense advantage in a good garden allotment beside his cottage, and that is vastly increased when that cottage is on the farm, away from the temptation of the beer-shop, and where, as part of his wages, he receives the keep of a cow. This is the system in the border counties, where agriculture is in the most prosperous state, and the agricultural labourer the best fed and clothed, the most educated and intelligent of his class in any part of the three kingdoms. But the Irish farmer of a few acres of inferior land must be in a position of chronic distress. The witnesses most favourable to him examined before Mr. Maguire's Committee in 1865, held that 15 to 20 acres and upwards was the least extent on which a man with his family could be expected to thrive. On land of good quality, and near a large population, a much smaller extent might no doubt be found sufficient. But taking the land of Ireland as it is, and the circumstances of the country, and its mode of agriculture, there is a general consent of the most competent judges in that country, that farms below 15 or 20 acres are too small to afford a due return for the entire labour of a man and his family. It would therefore follow that 130,000 of the small farmers, with their families, are as many as the remaining eighth of the surface of Ireland can profitably maintain as farmers, and that there will then remain a surplus of 170,000 and their families. These figures represent the whole number of holdings; but several holdings are believed to be in many cases in the hands of one farmer, and the total number of occupiers is therefore reckoned by Lord Dufferin not to exceed 441,000. If that be so, the surplus to be otherwise provided for will not exceed 100,000.

That seems no impossible achievement. A wise measure for settling the long agitated question of the tenure of land will give a great impetus to improved agriculture, and the consequent demand for labour will rapidly absorb that surplus. It is, after all, little more than one additional family for every 160 acres of cultivated land. I have no doubt that the Legislature which shall pass the great measure of pacification for Ireland, which is now under its consideration, will in due time complete the work by a just land law, which will give greater security to the employment of capital

in the cultivation of the land, and call into action that surplus labour, without which its latent fertility cannot be fully developed.

XVI.—*The English Agricultural Labourer.*

But, though the state of the Irish peasant has been more forced upon public attention, the condition of the agricultural labourer in England is very far from satisfactory. The agricultural returns afford no guide to its consideration. He is now the only class of the community who has no representative. The Irish peasant has, directly in many cases, by his vote as a small farmer, and indirectly through his church, which (connected neither with the landlord nor the State) brings the aggregate feeling of the people to bear upon their Parliamentary representatives. By one means or another they do make themselves heard in Parliament. But so little is known of the English agricultural labourer, that when his actual condition is set forth in the report of a Royal Commission, the public are struck with astonishment, and even the landowners are surprised to find a state of things at their doors which many of them little suspected. The condition of the labourers' dwellings is in some counties deplorable. It is not my province, however, on this occasion to enter further on that subject. I attempted to introduce a clause in the last Census Act, in 1860, which would have thrown much light on the state of our cottage accommodation, but it was rejected in the English Bill. It was adopted, however, in the Scotch census, and has shown that one-third of the population of Scotland lived, each family, in houses of one room only, another third in houses of two rooms; two-thirds of the whole of the people being thus found to be lodged in a manner incompatible with comfort and decency as now understood. The same returns in the next census will show the progress that has been made in the 10 years; and the public advantage of this will, I trust, lead to the adoption of a similar system in the next English census.

In the same year I moved for returns of the wages of agricultural labourers in England and Wales, which was subsequently followed for Scotland and Ireland. Upon these returns Mr. Purdy read to this Society an able and interesting paper in 1861. These form very important branches of the statistics of agriculture, and though it is not necessary that they should be included in the annual returns, I trust their importance will not be overlooked in the preparation of the next Census Act.

XVII.—*Great Change in proportion of the People Dependent on Agriculture.*

It has been found in Ireland, and is the case to a less extent in some parts of England, that it is not so much the low rate of wages

as the irregularity of employment which depresses the condition of the agricultural labourers. That is mitigated by emigration from the agricultural to the mining and manufacturing districts, or to foreign countries. Mere farming will not take up profitably the natural increase of population in a thickly-peopled country like ours, and the purely agricultural districts in each of the three countries are constantly parting with their surplus. The proportion between the producers and consumers of food is thus undergoing a marked change. In 1831, 28 per cent. of the population of England and Wales was occupied in the business of agriculture. In 1841 it was 22 per cent. In 1851 it had fallen to 16 per cent., not so much from an actual decrease of the numbers employed in agriculture as from the far greater proportional increase of trade. In 1861 the proportion was 10 per cent., and then not only had the proportion diminished, but the actual numbers had decreased by nearly one-fifth. It is a very remarkable fact that in the course of a single generation the proportion of the people of England employed in and dependent on agriculture had diminished from a third to a tenth. The only means of arresting this is by providing better-paid and more regular employment in country work, and thus diminishing the temptation of the higher wages of the mines, the factory, and the towns.

XVIII.—*Home Grown Sugar.*

Last year I touched on this subject, and mentioned the intention of trying the beetroot sugar growth and manufacture in this country. The experiment was made in Suffolk, and with so much promise of success, that in the same locality this season a sufficient breadth of beet will be planted to keep an extensive sugar factory in full work for the four slack months from October to February. The matter, then, will be beyond experiment, for if it proves, as is anticipated, the suitability of our climate and soil to the profitable production of sugar-beet, it will be the dawn of a new agricultural industry, which may rapidly be developed, to the great benefit both of England and Ireland. The possible magnitude of the result will be readily appreciated by the fact that in this country the consumption of sugar is equal to nearly one-third of all the sugar annually produced in the tropics and on the continent, and that any disturbance which would seriously alter the state of property or labour in Cuba, must give an immense stimulus to the demand for beetroot sugar. And the reduction of price which will follow the "free breakfast table" promised to us by Mr. Bright, as one of the early results of economy in our public expenditure, will rapidly augment that demand.

In a national point of view the introduction of a new manu-

facture connected with agriculture, such as beetroot sugar, will both enlarge the field of remunerative labour in the country, and provide an absolute addition to agricultural produce and wealth. For the pulp after the sugar is extracted has lost little of its value as cattle food, and therefore the substitution of sugar-beet for some of the present cattle crops will displace to a very small extent the means of feeding cattle. And even that will soon be made good by the more generous farming which the profits of sugar growing will enable the farmer to practise on the other crops of his farm.

I have here a specimen of the first English-grown sugar, not a mere experiment, but produced as a matter of business. I find, from a French paper sent to me this morning, that the northern departments of France now produce about 200,000 tons of sugar a year, or nearly two-thirds of the sugar consumed in France. We use twice as much sugar in this country as the French do, and its consumption is always increasing. At a reduction of price equal to the present duty that increase would rapidly extend. I may be over sanguine on the subject, but I should not be greatly surprised if in ten years hence many thousand acres in the United Kingdom should be profitably employed in the production of home-grown sugar.

XIX.—*Return of Horses Desirable.*

The last topic on which I will touch is one of omission. The returns of live stock do not include horses, the most interesting, and individually the most valuable of all. As every man knows the number of his horses, the return can be given without occasioning a particle of trouble, and I hope therefore that the schedule for the present year will include a column for horses.

In conclusion, I think it will be generally admitted that the agricultural returns have proved most useful and most instructive, and considering the ever increasing demands of our population on the resources of agriculture, I trust that nothing will be permitted to interfere with their continuance, and with that greater development which further experience may render it desirable to introduce.
